



Evaluating Floyd's Effect on Health in Eastern North Carolina

Since the now-famous storm of September 1999, the name "Floyd" has taken on new associations for many people in eastern North Carolina: devastation and environmental catastrophe. On 12 November 1999, representatives from state and federal agencies and local universities met on the NIEHS campus in Research Triangle Park, North Carolina, to discuss the environmental health implications of the floods following Hurricane Floyd. In addition to determining the potential long-term human health and ecological problems, participants hoped to develop strategies, collaborations, and partnerships to be used in the restoration of eastern North Carolina.

The meeting served as a forum for sharing information and comparing notes on the problems posed by Floyd from people who are closely involved in current remediation and public health efforts. Moderators led discussions on the overall poststorm status of eastern North Carolina. Roundtable discussions focused on specific environmental concerns such as contaminated water supplies, animal waste spills, disturbed water and marine ecosystems, and the public health response to the storm. Finally, possible future disease outcomes, including infectious and respiratory disease, and prospects for building partnerships for research were discussed.

Many participants felt the most egregious long-term health effects will prove to be those related to the psychological stress associated with the storm. Participants acknowledged that many health effects attributable to the storm will probably be buried under the anonymity of chronic illness (such as preexisting asthma) or perceived mundanity (such as back strain from cleaning up debris). It was also acknowledged that it may be too early to distinguish the full health impact or other long-term ecological and environmental effects of the storm. For example, it is not known if contaminants were introduced into estuary sediments that may have future effects on bottom-dwelling sea creatures and higher organisms in the food chain.

A lack of baseline health data among the populations of eastern North Carolina makes it difficult to accurately gauge Floyd's environmental health effects. Many problems that have rocketed into public awareness, such as asthma and well-water contamination, may have existed before Floyd hit. Still, these issues are important as residents return to homes and work environments that may pose medium- to long-term public health hazards.

While some parts of the puzzle are missing, there are plenty of pertinent data that can be drawn into remediation and public health protection efforts, said attendees. For example, the U.S. Environmental Protection Agency, the U.S. Geological Survey, and the North Carolina Department of Environment and Natural Resources have conducted monitoring of waterways. According to meeting attendees, these data need to be consolidated into a cohesive body of knowledge, perhaps pooled into one database to be used for evaluation and prediction of environmental outcomes.

Immediately following the hurricane, the North Carolina Department of Health and Human Services initiated surveillance of 150 reportable conditions diagnosed in 18 regional hospitals. These cases could establish a cohort for collaborative research between the state, federal research agencies, and academic researchers. Analysis of research conducted after other natural disasters may also be helpful in responding to the floods.

Participants agreed that education is the key to public health protection. Many reasoned that health policies are driven by public opinion and that the public and legislators must therefore be educated on the relative risks of the various problems presented by Floyd. Based on an informed understanding, wise remediation decisions can be made and sound policies for rebuilding and future growth can be established. In addition, long-term programs evaluating the human health and environmental effects of this disaster will help minimize effects of future events.

A report summarizing the public health and environmental issues identified at the meeting will be published in a future issue of *EHP*.

—Susan M. Booker